

SUBSCRIPTION LIST
FOR A WAGGON ROAD BETWEEN ENSENADA AND TIJUANA,
LOWER CALIFORNIA.

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I, who have signed my name, and placed the amount of my subscription opposite my name, agree to pay the whole amount of my said subscription toward the construction of said waggon road from Ensenada to Tijuana, L. C., to Eulogio Romero, at Ensenada, L. C. as soon as the total amount necessary for said road, (\$64,000. Mex.) has been subscribed and the contract for it signed. And I hereby authorize Mr Romero to from time to time pay the said contractor for portions of the road as it is completed, until it is all completed. Provided, however, that the said contractor shall be bound to build the road as hereinafter specified, and that no money shall be paid to said contractor for any portion of the road unless it is built as so specified from Ensenada to Sausal de Comacho, over the present existing road, which needs crowning, removal of stones and proper drainage of bridge entrances.

Thence to Arroyo del Carmen over practically the present road reconstructed; crossing the Carmen at its mouth by a 120 foot bridge, costing about \$1200, the road rises by a 5 degree side hill grade beginning at the Carmen's mouth, and about two miles long on the Northern side of the canon. Thence by a winding and easy approach to the high bluff over the ocean, along which, at times on the divide, at times on side hill grades, under 5 degrees, for several miles, to the Mission Vieja divide, which is the highest point on the road. Thence by a natural and easy, winding succession of valleys, involving much side hill grading, but no steep grades, to the Jatay valley.

From this along the Jatay Canon by a 5 degree grade along the Southern side of the canon to its mouth, where about a mile from the ocean a 3 span, 24 foot bridge, 7 feet high, costing \$350 would carry the road to the North bank, and by a grade to the coast mesas.

Thence to the Mission Vieja Valley, there are no difficulties beyond grading. To get down from the ocean mesa to this valley implies an expensive grade of about 6 degree fall, and to safely cross the stream, which is the largest passed by this road, a bridge of 140 foot length and 10 foot height.

The rise on the other side of the valley will imply a level grade along the ocean cut into a sandstone cliff, about 40 feet above tide water. This will cost about \$800. Thence to the Descanso are a number of grades to get over the present steep hills as the hills run close to the sea in places. The grade of 5 degrees is not exceeded but one bridge of 42 feet and another of 30 feet will be needed, beside a number of road box drains. At the Descanso a 150 foot bridge about 7 feet high would be needed with 2 miles of oiled road over the drifting sand.

Between the Descanso and the Megano one mile of road must be cut along the sand bluff just above high tide wash level. This with the necessary culvert for drainage will cost about \$1500. At the Megano a 50 foot bridge is needed, but the approaches are not difficult.

Beyond the Megano the mesas are soft and erode easily,

1 so that to pass them there will be much cut and fill work.
2 To protect their work which would otherwise be lost in the
3 first winter rains a succession of flat V's must be cut
4 with a grading plow, and a good sized road box placed at
5 each apex of each V.

6 Below each road box it is essential to plant mescal
7 or tuna in quantity to prevent erosion by the water flowing
8 from it. Oil is also essential for this stretch of road.

9 Beyond the Megano a succession of deep canons come in,
10 involving:

11 One Bridge about 100 feet and 35 feet high,

12 One " " 80 " " 30 " "

13 One " " 40 " " 30 " "

14 One " " 70 " " 25 " "

15 One " " 12 " of stringers only.

16 One " " 6 " " " "

17 One " " 48 " and 8 feet high,

18 which latter with 500 feet of embankment 2 feet
19 high will cost about \$700.

20 One Bridge about 40 feet long;

21 One Culvert 4 feet wide and 6 feet high, with a 10 foot
22 fill costing about \$300.

23 One Bridge about 14 feet long.

24 To cross the Rosario creek a bridge about 100 feet long
25 is essential, and the approaches on one side may be a little
26 difficult. Total cost of bridge and approaches \$1650.

27 Leaving Rosario the new road would largely follow the
28 present wagon road to Tijuana. Many road boxes but no
29 bridges would be needed. Estimated cost from Rosario to
30 Tijuana Custom House about \$6,000, or \$64,000 for the whole
31 road.

32 In no case shall any grade on this coast road exceed
33 5 degrees, except at the Mission Vieja, where the grade
34 must not exceed 7 degrees.

35 The road as above specified shall in no place be less
36 than twelve feet wide, and not more than 500 feet shall in
37 any place be as narrow as 12 feet. It being understood
38 that where any part of the road exceeding 100 feet is nar-
39 rowed to 12 feet, the following 1000 feet shall be not
40 less than 16 feet wide, and that the road called for by the
41 contract shall be a road 16 feet wide, except in definite
42 locations.

43 It is also understood that road boxes 12 inches high
44 by 24 inches wide inside measure, shall be placed at inter-
45 vals of 500 feet wherever the grade exceeds 3 per cent, and
46 at 800 feet distances where the grade is between 2 and 3
47 per cent., such road boxes to be connected on the upper
48 side of the road by a drain 12 inches deep and 18 inches
49 wide at the top. Such boxes to be of redwood 2 inches
50 thick, dipped in boiling coal tar before being put in
51 place, and set across the road in such a way that the
52 outer end of the box shall be at least 12 inches lower
53 than the upper end; the top of which upper end shall be
54 always 12 inches lower than the crown of the road.

55 On all level stretches, or where the grade is under
56 2 per cent. the road shall be crowned from a ditch on each
57 side to a crown height of 8 inches above the higher edge
58 of the road. On all grades the road shall be crowned from
59 the upper side until the center is at least 8 inches above
60 the inside edge of the road bed, counting such inside edge
61 to be the outside edge of the inner ditch which runs between
62 the road boxes for drainage purposes.

1 Sharp curves, especially at the entrance to grades
2 are most undesirable for a road on which great speed is
3 desirable. This road must be so constructed that slow
4 downs below 10 miles per hour need seldom be made, and that
5 an average speed of 20 miles per hour can be maintained by
6 powerful machines from the outskirts of Tijuana to the out-
7 skirts of Ensenada.

8 For at least 40 miles, the natural earth is of such a
9 character that nothing is needed to prevent washing, except
10 a proper crowning of the road, and road boxes and culverts
11 at sufficient intervals to prevent cutting due to accumu-
12 lation of storm water.

13 Crude oil must be placed on about ten miles of the
14 road. (1) Where, as at the Descano, drifting sand must
15 be held down; (2) at several stream crossings, where a
16 light soil makes oil on bridge entrances desirable; (3)
17 near the Megano, about two miles of a very light clay on
18 the ocean mesas is badly cut out and to hold the road in
19 place on it will need frequent ^'s on the upper side,
20 with road boxes at each point of the ^ and oil both on
21 the road and in the trenches made by these water collecting
22 ^'s, to prevent washing out by storm water.

23 The sums subscribed are in Mexican money, and it is
24 understood by the subscribers that the works shall be done
25 during the rainy season, for cheapness.

26 SUBSCRIBERS.

27 AMOUNTS SUBSCRIBED.

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SUBSCRIPTION LIST
FOR A WAGGON ROAD BETWEEN
ENSENADA AND TIJUANA,
LOWER CALIFORNIA.

Dated _____, 1906.

Listo de suscripcion para construir un
Camino carretero entre Ensenada y Tijuana
Baja California.

Yo que firmo mi nombre y que suscribo el
monto de mi suscripcion en la parte opuesta a
mi nombre, me comprometo a pagar ^{Toda la can} ~~la~~ ^{al Sr. Enrique Romero} ~~parte~~ ^{parte} que se
emplee en la construcción del Camino Carretero que
unirá Ensenada con Tijuana B.C. ~~de~~ verificar
parcialmente mis pagos, ~~en~~ de tiempo en tiempo co-
mensando desde ~~que esté~~ la fecha en que se firme
el contrato para la construcción del Camino. - Además
por el presente anticipo al Sr. Romero para que pague
en plazos convenientes las partes del Camino que
se vayan terminando hasta su completo termino. -
Conveniendo sin embargo, que el contratista deberá
construir el Camino como se especifica en segundo y que
ninguna suma se le pagará al contratista por cual
quiera porción del camino construido á menos que se
construya como está especificado desde Ensenada á
San José de Comacho, sobre la ruta actual, que necesi-
t

ta un remate bien acabado, limpiándolo de piedras y de
sagues en las entradas a los puentes.

Desde allí, seguirá el camino hasta el arroyo
del Carmen prácticamente sobre el actual camino
reconstruido, cruzará la boca del arroyo del
Carmen por medio de un puente de 150 pies que
costará \$1.200⁰⁰; el camino se eleva 5 grados al lado
de la loma que comienza en la boca del arroyo
del Carmen. - De allí da vuelta aproximándose
suavemente a las altas rocas de la orilla del mar.
A veces sigue la costa hasta donde se separan los ca-
ñinos sobre la falda de las lomas con un ascenso de cinco
grados, continuando por varias millas hasta donde se aparta
el camino de la Misión Vieja, que es el punto mas elevado
del camino. - De este último lugar sigue rodeando suavemente
una sucesión de Valles, requiriéndose fatigar las lomas pe-
ro sin necesidad de escalonamiento hasta el Valle de Jatay.

De aquí sigue el Cañon de Jatay con un ascenso de
cinco grados por todo el lado Sur del Cañon hasta su desem-
bocadura, donde como a una milla del mar se construirá un
puente de tres palmos, 24 pies de longitud por 7 pies de alti-
ra, con un costo de \$350⁰⁰ que llevará el camino a la ri-
vera Norte y gradualmente hasta las mesetas de la costa.

De allí sigue hasta el Valle de Misión Vieja no hay nin-
gunos obstáculos aparte de terraplenes. Para bajar des-
de las mesas á este Valle se requiere ^{un abap de} terraplen con
descenso de seis grados y para cruzar el cauce del
arroyo que es el mas grande en este camino, se requie-
re la construcción de un puente de 140 pies de longitud
por 10 pies de altura.

La elevación del otro lado del Valle requiere un
terraplen graduado por todo el frente del abra que mira al
mar hasta llegar á una línea de pocas arenas situadas
como á 40 pies sobre las altas mareas. Esto costará
alrededor de \$ 800⁰⁰. — Desde allí hasta Descanso
hay varias cuestas que pasar hasta alcanzar á la subida
de las lomas que se prolongan paralelas á la costa
en algunos lugares. — El ascenso no excede de cinco gra-
dos pero se necesitan ~~dos~~ ^{dos} puentes un puente de 42 pies
y otro de 30 pies, además de encajonar el camino
en partes con suficientes desagües. — En el Descanso
se necesita un puente de 150 pies de longitud por
7 de altura. — Entre el Descanso y Merano una mi-
lla del camino debe construirse en la orilla del
paseo de arena arenosa

Este con los desagües necesarios costará cerca de \$1.500. - En el Medano se requiere un puente de 50 pies siendo fáciles sus extremos

mas alla del Medano las mesetas se componen de tierra suelta y ondulada, así es que para pasarlas había que hacer una zanja y rellenada de material sólido, que se necesitara proteger (de otro modo podría destruirse con las primeras lluvias del invierno) por una serie de angulos planos cortados con arado haciendo una capa al camino resguardado por los costados de cada uno de los arroyos

Alto lado de la capa del camino, es indispensable hacer grandes plantaciones de melcal o Guina para evitar que las corrientes causen resacas. - También se necesitan acequias en esta parte del camino. -

Al otro lado de Medano, hay una serie de cañadas profundas que requieren la

construcción de:

un puente de	100	pies	longitud	por	35	de	altura
uno	"	"	80	"	"	30	"
uno	"	"	40	"	"	30	"
uno	"	"	70	"	"	25	"
uno	"	"	12	con	amarras	solamente	
uno	"	"	6	"	"	"	"
uno	de	"	48	y	8	pies	altura

al cual se le añadirían después 500 pies de basamento de pies de altura con un importe de

\$700.-

un Puente de 40 pies longitud
una curva 4 pies ancho y 6 de altura de 10 pies
longitud.

Un puente de 14 pies de longitud

Para cruzar el Cañon del Rosario, se le construyese
un puente de 100 pies longitud pero una de sus
extremidades, ofrece alguna dificultad. El costo
total del Puente y extremidades sería de \$1,650,00

Saliendo del Rosario el nuevo camino sigue en
pensamiento sobre el camino carretero que va ac-
tualmente a Tiquand - se necesitara sufragar
el camino en varias partes pero no se necesitan
puentes. El costo aproximado del camino desde el
Rosario a Tiquand la Adrians de Tiquand sería
como de \$6000 ó \$64,000 por todo el camino

En ningún caso se necesita que los rascos
de este camino excedan de 5 grados, exceptuando
en Misión Uepa, donde no pasaran de 7 grados.

El Camino arriba descrito no deberá ser en
ninguna de sus partes de menos de 12 pies
^{de ancho} ~~de ancho~~ y ningún trecho ^{que exceda} ~~de más de 500~~
~~pies será~~ y ~~será~~ sin exceder de 500 pies de
longitud. Los ~~tramos~~ ^{partes} que tengan esa an-
chura. Debe advertirse que ^{en} cualquiera parte
del camino que exceda de 100 pies ^{que se han reducido} ~~se reduce~~
su anchura a 12 pies, la parte restante del cami-
no en una extensión de 1000 pies por lo menos, no
~~debe~~ ser más angosta que 16 pies y que por lo
general todo el camino a que se ~~refiere~~ ^{hace}
referencia tendrá una anchura de 16 pies exceptuando
determinadas localidades. - También
se hace constar que el encaponado del camino